BASIS FOR THE AMENDMENT

Claims 1-32 are active in the present application. Claims 22-31 are new claims. Support for new Claims 22-24 is found in Table 4 on page 8 of the specification. Support for new Claim 24 is found on page 10, lines 16-29. Support for new Claims 26-27 is found in Table 3 on page 7. Support for new Claims 28-31 is found in the Examples; see for example Tables 6 and 7. Support for new Claim 32 is found in Table 1. Claim 1 has been amended to require that the coating is carried out in a milling chamber and the process comprises spraying in a heated gas. Support for the amendment to Claim 1 is found on page 5, lines 19-20 and page 4, lines 5-10. Independent Claims 19-21 have been amended in a manner consistent with the amendment to Claim 1. No new matter is believed to have been added by this amendment.

REQUEST FOR RECONSIDERATION

Applicants thank Examiner Cain for the helpful and courteous discussion of January 29, 2004. During the discussion, Applicants' U.S. representative presented arguments that the prior art process for coating a silica material requires the presence of a wax of higher melting point and that the wax-coated silica particles obtained by the prior art process may not exhibit the desirable wax attachment properties of the wax-coated silica particles obtained from the claimed invention.

Applicants have disclosed a process wherein one embodiment a silica particle is coated, or partially coated, with a wax. The coating may take place simultaneously with milling (e.g., grinding) wherein the particle size of the wax particles or the silica particles may be changed. Coating takes place by heating the mixture of silica and wax materials to a temperature above the melting point of the wax.

Applicants have disclosed that coating at a temperature above the melting point of the wax is important. Applicants have demonstrated in Table 7 on page 9 of the specification that when a wax is coated onto a silica particle at a temperature below the melting point of the wax poor sedimentation properties are exhibited by the coated silica particle thereby obtained (Table 7 is reproduced below for convenience).

Table 7

Wax name		AF 30	SL 555	Aquabead 916
Outlet temperature	(°C)	80	80	80
d10*	(μm)	4.67	4.18	4.15
d50*	(μm)	8.54	8.17	7.79
d90*	(μm)	14.05	12.56	11.75
C content	(%)	5.67	5.79	4.76
Grindometer value	(μm)	27	27	31
Gloss at 60° relative to standard**	(%)	0.8	1.1	-1.2
Sedimentation***		5	2	2
Wax detachment		-	none	none

* Measuring instrument: Coulter LS 230
** Standard: Acematt HK 460, Degussa AG
*** Measured according to sedimentation analysis method outlined below

In the Table above, the AF 30 wax has a melting point of 105-112°C. When the temperature of the coating process is carried out at 80°C (e.g., a temperature that is lower than the melting point of the wax) the sedimentation properties of the resulting wax-coated silica particles are poor (see the second to the last row in Table 7 above). This may be compared with the results disclosed in Tables 5 and 6 wherein the outlet temperature of the process is 120 and 100°C, respectively. The sedimentation properties of the wax-coated silica particle obtained when coating is carried out at a temperature above the melting point of the wax are substantially better than the sedimentation properties obtained when the process is carried out at a temperature lower than the melting point of the wax.

The Office rejected Claims 1-21 under 35 U.S.C. § 102(b) in view of a patent to Aldcroft (EP0541359A1). The Aldcroft patent discloses a process that may include treating silica and wax in a fluid energy mill at a temperature of 180°C (see page 2, lines 9-10 and page 6, lines 41-43).

Applicants traverse the rejection in view of the amendment to independent Claims 1 and 19-21. The amendment to the independent claims requires that the claimed process include coating a silica particle in a milling chamber with a wax above the melting point of the wax while spraying a heated gas into the milling chamber at a temperature of from 60-160°C. Since Aldcroft discloses that the prior art process is carried out at a temperature of 180°C, the amendment to the present independent claims overcomes the rejection under 35 U.S.C. § 102(b) in view of the prior art relied upon by the Office.

Applicants submit the amendment to Claims 1 and 19-21 overcomes the rejection in view of Aldcroft.

Applicants submit the process claimed in present independent Claims 1 and 19-21 is not obvious in view of Aldcroft on the grounds that Aldcroft nowhere discloses or suggests carrying out coating of silica particles at a temperature of less than 180°C. Applicants submit that the at least 20°C reduction in temperature with respect to the prior art 180°C is a feature of the claimed invention that may significantly reduce the utility costs of carrying out coating a silica particle with wax.

New dependent Claims 28-31 further limit the claimed process by requiring that the coating is carried out with a single wax.

An important feature of the prior art process is that the wax is a ternary mixture of a plasticizing microcrystalline wax, a hard microcrystalline wax and a synthetic polyethylene wax. The waxes have sequentially higher melting points of 70-85°C, 90-95°C and 110-140°C, respectively.

Aldcroft provides the sedimentation properties of the prior art wax-coated silica particles in both inventive and comparative embodiments. In Table 2 on page 7 of Aldcroft, wax-coated particles containing only a single wax are disclosed (see Test 1 – synthetic polyethylene; Text 2 - microcrystalline wax; and Test 3 - microcrystalline wax). Blends of

the polyethylene wax and a microcrystalline wax are also disclosed in Tests 4-7. The sedimentation properties of the wax-coated particles obtained in Tests 1-7 in Table 2 of Aldcroft are described as

> "clearly none of the prior art materials provide the necessary enhancement in either sediment behavior or compatibility, though the micronized product containing the wax blend 10 polyethylene (MW2000):90 microcrystalline did offer improved performance in accord with the teaching of US 4,097,302. The performance of the micronized silica contained in the polyethylene wax (MW500) is interesting, because at room temperature a hard sediment formed at 24 hours, whereas at 70°C a soft sediment has been observed up to 7 days." (page 6, line 49 through page 9, line 57).

Aldcroft then compares the performance of a number of wax blend compositions in preparing wax-coated silica particles in Table 3 beginning on page 11 of the prior art patent. Aldcroft demonstrates that in the absence of the polyethylene wax (the wax which has the highest melting point (110-140°C)) silica particles which have poor sediment behavior are formed as demonstrated in Test I and II where hard sediments are formed within 24 hours. In all of the Tests I-XII of Aldcroft shown in Table III, no wax blend that contains less than the three waxes disclosed to be necessarily present in the ternary wax mixture is able to provide good sedimentation properties. In fact, in any of the Tests the absence of one of the three waxes provides a hard sediment.

Applicants submit that the subject matter of new dependent Claims 22-31 is not obvious in view of Aldcroft as evidenced by Aldcroft's disclosure that a ternary wax composition must be used in the prior art process and Aldcroft's examples showing that the prior art wax-coated silica particle is unable to provide the desired sedimentation properties in the absence of the high melting polyethylene wax.

Applicants submit the amendment to the claims places all now-pending claims in condition for allowance. Applicants respectfully request the withdrawal of the rejections and the passage of all now-pending claims to Issue.

Respectfully submitted,

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